

Curious Absence of Rain Hampers Farming

Overall weather conditions improved from the previous year, but remained less than favorable in many agricultural areas. While the beginning and ending of the year were marked with unstable weather, most of 1999 was distinguished by the consistent presence of trade winds that produced generally sunny skies and moderate temperatures; conditions that aided the growth of many crops. However, 1999 was also marked by the curious absence of rain showers that are typically associated with the trade winds. As a result, crops that largely depend on natural rainfall did not perform well. This group included orchard crops such as coffee, macadamia nuts, avocados, guavas, and other fruit trees. Pastures were among the most severely affected by the dry weather as they depend on natural rainfall for grass growth and rejuvenation. Deteriorated pastures were a major reason why many cattle ranchers were forced to reduce their herd size. Crops receiving irrigation, on the other hand, were able to take near full advantage of 1999's stable weather conditions. With approximately 90 percent of its acreage subject to irrigation, vegetable farmers fared particularly well. Still, some irrigated farms were adversely affected by the overall dryness as both voluntary and mandatory water conservation measures were implemented during the year. Geographically, the northern islands fared better in 1999 as passing cold fronts provided most areas with adequate precipitation. Southern islands, however, were relatively dry with leeward sections being particularly parched.

January - April

A shear line passed across the State on New Year's Day generating moderate to heavy showers on Kauai and Oahu. A cold front then dumped some heavy showers on Maui County and portions of Hawaii island on January 8 and 9. While crop progress and fieldwork were hampered by these sometimes heavy showers, losses were relatively light and farmers welcomed the showers after enduring one of the most intense El Niño episodes the previous year. The promise of a wet year, however, quickly faded in February as most rainfall stations reported receiving less than 50 percent of their normal monthly total. Unseasonably strong trade winds in early February also hampered farming activities and crop progress. Trade winds continued to blow throughout March and April. These trades generated occasional showers, heavy at times, in windward areas. Among the wettest spots was the windward side of the Big Island where total rainfall was 36 percent above the mean during the first four months of 1999.

May - September

Trade winds were light and rainfall was scant as the Hawaiian islands entered its dry period. A Kona storm west of Kauai spawned some heavy shower activity over that island at mid-May. The other islands, however, failed to benefit from the Kona storm and generally remained dry. The windward side of Hawaii island also began to see a reversal of rainfall with Hilo airport reporting only 2.84 inches of rain in May, down 30 percent from the normal amount. This drying out of the normally wet windward side of the

Big Island would continue for the remainder of 1999. As the *Ka'u* or drier season continued into June and July, dry conditions became the norm. There were occasional showers, but in general, conditions remained relatively dry. Voluntary water conservation measures began to pop-up on Maui in late May and on Molokai in June. The Big Island instituted its own water conservation measures in late June. As summer deepened with no significant amount of rain, the water restrictions began to tighten. Maui moved to mandatory restrictions in July and a drought emergency was declared for parts of the Big Island in August.

October - December

The start of the wet or *Ho'oilo* season was appropriately named as a large Kona storm northwest of the State generated some intense showers for many parts of the State. Rainfall was heaviest on Kauai with four-day totals in the three to seven inch range. The Kona storm hampered crop progress and short-lived flooding was reported, but the storm also provided some much needed rain to previously parched areas. Kauai was subjected to another round of heavy showers in early November when another Kona storm developed close to the island. A relatively dry 1999 ended in December with a variety of unstable weather conditions generating frequent showers. Many stations across the State recorded normal or above normal rainfall during December.